

WHAT IS CLAIMED IS:

1. An apparatus for performing hybridization reaction between a biological substance immobilized on a substrate and a biological substance contained in a solution, the apparatus comprising:

a case for accommodating the substrate immobilized with the biological substance;

an injecting member for injecting a solution into the case;

a discharging member for discharging the solution from the case; and

an agitating member for agitating the solution injected into the case.

2. A hybridization reaction apparatus according to claim 1, wherein the substrate is a circular substrate with a throughhole at the center, and the agitating member comprises a driver that rotates an agitator placed in the throughhole at the center of the substrate.

3. A hybridization reaction apparatus according to claim 1, wherein the agitating member repeatedly tilts the case by moving the alternate ends of the case up and down.

4. A hybridization reaction apparatus according to claim 1, wherein the agitating member comprises an agitation fan attached to the case and a rotating member for rotating the agitation fan.

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5. A hybridization reaction apparatus according to claim 1, wherein the case is detachable.

6. A hybridization reaction apparatus according to claim 1, wherein the injecting member for injecting the solution comprises a solution selecting valve for selecting between the reaction solution and a washing solution, and an injection pump for sending the solution selected by the solution selecting valve to the case.

7. A method for performing hybridization reaction between a biological substance immobilized on a substrate and a biological substance contained in a solution, the method comprising: injecting the solution containing the biological substance into a case accommodating the substrate immobilized with the biological substance; and allowing hybridization reaction while agitating the solution in the case.

8. A method for performing hybridization reaction between a biological substance immobilized on a substrate and a biological substance contained in a solution, the method comprising: injecting the solution containing the biological substance and a liquid whose liquid density is lighter than the solution containing the biological substance and thus which does not mix with the solution into a case accommodating the substrate immobilized with the biological substance; and allowing hybridization reaction while agitating the solution containing the biological substance and the liquid in the case while keeping the solution phase and the liquid phase separated from each other.